ITS Technical Bulletin #304

DEBUG TOOL

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Smart Test to Debug Tool Conversion Considerations

In an effort to reduce software costs, and possibly increase the functionality of a software product, ITS is converting from Smart Test to Debug Tool. Both products are quite similar in functionality but the cost savings will be considerable by converting to Debug Tool.

The Operating System running on the mainframes is developed by IBM, as is Debug Tool, and therefore, maintenance will require fewer resources

Smart Test and Debug Tool have some of the same requirements in order to make the tools work. Those of you who are familiar with Smart Test may have an easier time understanding the requirements for Debug Tool and how it works.

Debug Tool is a source level Debugger which allows the programmer to:

- STEP through a program;
- SET breakpoints;
- RUN to breakpoints;
- LIST or MONITOR variables;
- LIST or MONITOR storage;
- dynamically update variables; and,
- much more.

In order to prepare a program for subsequent input to the Debug Tool, there are a couple of things that are required in the Compile step:

1. The TEST(ALL) parameter must be part of the PARM field.

2. The print output listing, from the Compiler, that is output through the //SYSPRINT DD card, must be sent to a member of a Partitioned Data Set (PDS). Example follows:

```
//IGYCRCTL EXEC PGM=IGYCRCTL,REGION=2M,PARM=(,
//    TEST(ALL),RENT,NODYNAM,LIB,APOST,'DATA(31)',NONUMBER,
//    MAP,OFFSET,XREF,NOOPT,
//    )
//SYSLIB      DD  DSN=CICS.BMS.COPYLIB,DISP=SHR
//SYSPRINT DD  DISP=SHR,DSN=XXXXX.DEBUG.LISTING(COBPGM02)
//SYSLIN     DD  DSN=&&TEMPOUT,DISP=(MOD,PASS),
//               UNIT=SYSDA,SPACE=(80,(250,100))
//SYSUT1     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT2     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT3     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT4     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT5     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT6     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSUT7     DD  UNIT=SYSDA,SPACE=(460,(1000,500))
//SYSIN       DD  DISP=SHR,DSN=XXXXX.DEBUG.SOURCE(COBPGM02)
```

If a listing of the program is desired, you may print the member of the PDS using the IEBGENER utility. Example follows:

```
//IEBGENER EXEC  PGM=IEBGENER
//SYSPRINT  DD  SYSOUT=*
//SYSUT1     DD  DISP=SHR,DSN=XXXXX.DEBUG.LISTING(COBPGM02)
//SYSUT2     DD  SYSOUT=*
//SYSIN       DD  DUMMY
```

If the program is to be used as a task within CICS an additional Link Edit step is required. The module EQADCCXT, contained within the SYS1.EQAW.SEQAMOD library, must be included during the Link Edit of the CICS program. The SYS1.EQAW.SEQAMOD library may be concatenated to the //SYSLIB DD card. Example follows:

```
//IEWL          EXEC PGM=IEWL,REGION=0M,PARM=(,
//               'DCBS,LIST,XREF,LET,SIZE=(256K,128K),AMODE=31,
//               RMODE=ANY,RENT',)
//SYSLIB      DD  DISP=SHR,DSN=SYS1.EQAW.SEQAMOD
//               DD  DSN=SYS1.CEE.SCEECICS,DISP=SHR
//               DD  DSN=SYS1.CEE.SCEELKED,DISP=SHR
//TEMPLIB    DD DSN=&&TEMPOUT,DISP=(OLD,DELETE)
//SYSLMOD  DD  DISP=SHR,DSN=XXXXX.DEBUG.LOADLIB
//SYSUT1     DD  UNIT=SYSDA,DCB=BLKSIZE=1024,
//               SPACE=(1024,(200,20))
//SYSPRINT  DD SYSOUT=*
//SYSLIN      DD *
```

```
    INCLUDE SYSLIB(EQADCCXT)
    INCLUDE TEMPLIB
    NAME COBPGM02(R)
/*
```

If the program is to be used as a batch program, it will not effect the execution of the program by Debug Tool to including the EQADCCXT module during Link Edit.

Subsequent to the Compile and Link Edit of a program for Batch, the ISPF option '**D**' should be used to invoke the online execution of Debug Tool.

Subsequent to the Compile and Link Edit of a transaction for CICS, the **DTCN** transaction may be used to initiate the Debug Tool execution of a previously compiled transaction.

The Local panel—L.CICS—is a Rexx program which has been established to assist programmers with the compile and link edit their CICS transactions. This Rexx will be available on October 13, 2002 to incorporate the new Debug Tool requirements into the generated JCL. Until this Rexx is available, users may use JCL similar to the above examples, to accomplish the requirements for Debug Tool.